

ABSTRACT

A bovine adipocyte-specific polypeptide, termed leptin, is expressed in the fat tissue of cattle. Expression may be altered in over fat cattle, or expression may be in the form of a protein of lesser biological activity relative to that of leaner cattle. The bovine adipocyte polypeptide, DNA and RNA molecules coding therefor, methods for its preparation, and antibodies specific for the polypeptide are disclosed. Methods for determining the susceptibility of cattle to fat deposition are based on measuring the levels of the bovine adipocyte polypeptide in a biological fluid or tissue extract or by measuring mRNA encoding the bovine adipocyte polypeptide in cells of the subject. Methods of evaluating an agent related to the deposition of fat in cattle comprise contacting the agent with an adipocyte *in vitro* and measuring the amount of the bovine adipocyte polypeptide or mRNA that is produced by the adipocyte. Methods of limiting fat deposition include administering leptin or leptin DNA, and methods of altering intake include administering leptin, leptin DNA, or an antibody directed against leptin.